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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/524,606

08/02/2005

Jinyan Li

54384/DBP/C982

4851

23363 7590 07/29/2008  
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EXAMINER

BROWN JR, NATHAN H

ART UNIT

PAPER NUMBER

2129

MAIL DATE

DELIVERY MODE

07/29/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/524,606	<b>Applicant(s)</b> LI, JINYAN	
	<b>Examiner</b> NATHAN H. BROWN JR	<b>Art Unit</b> 2129	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE (3) MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 76-96 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 76,83,84 and 90-92 is/are rejected.
- 7) ☒ Claim(s) 78-82,85-89 and 93-96 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### Examiner's Detailed Office Action

1. This Office Action is responsive to the communication for application 10/524,606 filed April 29, 2008.
2. Claims 76-96 are pending. Claims 1-75 are cancelled. Claims 76-89 are previously presented. Claims 90-96 are new.
3. After the previous office action, claims 76, 82, 83, and 89 stood rejected, while claims 77-81 and 84-88 were objected to.

### Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 76-82 and 90-96 rejected under 35 U.S.C. 101 because the claimed invention is not tied to another statutory class (such as a particular apparatus) or transform underlying subject matter (such as an article or materials) to a different state or thing. Independent claims 76 and 90 merely recite a data processing algorithm which produces two lists. Claims 76 and 90

are therefore considered to be non-statutory under 35 U.S.C. 101. Claims 77-82 and 91-96 provide further algorithmic limitation to claims 76 and 90, respectively, and thus fail to cure the deficiency of claims 76 and 90. Therefore, claims 76-82 and 90-96 are rejected under 35 U.S.C. 101.

### **Claim Rejections - 35 USC § 102**

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 76 and 77 are rejected under 35 U.S.C. 102(b) as being anticipated by **Alon** et al. (Alon), "Broad patterns of gene expression revealed by clustering analysis of tumor and normal colon tissues probed by oligonucleotide arrays", 1999.

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Regarding claim 76. (Previously Presented) *Alon* teaches in a training data set D containing gene expression data for a plurality of genes derived from a normal cell group including a plurality of normal cells and a diseased cell group including a plurality of diseased cells associated with a disease (see Abstract, *Examiner interprets the "40 tumor and 22 normal colon tissue samples" to be a plurality of normal cells and a diseased cell group including a plurality of diseased cells associated with a disease. Examiner interprets the gene expression data from the analysis of the samples performed with the "Affymetrix oligonucleotide array" to comprise a training data set D.*), a method for determining a plurality of emerging patterns within the gene expression data (see Abstract, *Examiner interprets "two way clustering...applied to both the genes and the tissues" to be a method for determining a plurality of emerging patterns within the gene expression data.*), wherein said emerging patterns are configured to be used to test cells from a test sample for the presence of the disease (see Abstract, "Two-way clustering thus may be of use both in classifying genes into functional groups and in classifying tissues based on gene expression."), the method comprising the steps of:

determining a plurality of emerging patterns from the training data set D (see Abstract, Examiner interprets "two way clustering...applied to both the genes and the tissues" to be a method for determining a plurality of emerging patterns from the training data set D (i.e the gene expression data from the analysis of the samples performed with the "Affymetrix oligonucleotide array").), wherein each of said emerging patterns comprises at least one condition based on a fixed range of said gene expression data for at least one of said plurality of genes (see \$MATERIALS AND METHODS, p. 6746, col. 1, Examiner interprets "PM-MM intensities" to be at least one condition based on a fixed range of said gene expression data for at least one of said plurality of genes.), and wherein a plurality of occurrences in one of said normal cell group and diseased cell group satisfies said at least one condition, but no occurrence in the other one of said normal cell group and diseased cell group satisfies said at least one condition (see p. 6747, Fig. 3, Examiner interprets the variation of gene intensities to disclose a plurality of occurrences in one of said normal cell group and diseased cell group satisfies said at least one condition, but no occurrence in the other one of said normal cell group and diseased cell group satisfies said at least one condition.); and

creating two lists, wherein a first list of said two lists contains a frequency of occurrence,  $f_1(m)$ , of each emerging pattern  $EP_1(m)$  from said plurality of emerging patterns that has a non-zero occurrence in data associated with said normal cells, and a second list of said two lists contains a frequency of occurrence,  $f_2(m)$ , of each emerging pattern  $EP_2(m)$  from said plurality of emerging patterns that has a non-zero occurrence in data associated with said diseased cells, wherein said two lists each provide a plurality of emerging patterns configured to be used as a diagnostic tool to determine whether the cells from the test sample are normal or diseased (see p. 6747, Fig. 3, *Examiner interprets* "(A)...clustered data set of 2,000 genes in 22 normal and 40 tumor colon tissues" and "(B)...A but with EB and EB1 colon carcinoma cell lines (17) added to the data set" to be two lists each providing a plurality of emerging patterns configured to be used as a diagnostic tool to determine whether the cells from the test sample are normal or diseased.)).

8. (Previously Presented) Alon teaches the method of claim 76, wherein at least one of said emerging patterns comprises at least three conditions for each of said normal and diseased

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cells (see Alon, §MATERIALS AND METHODS, p. 6746, Fig. 2 (color key), Examiner interprets "PM-MM intensities" {-3, -2, ..., 6, 7} to comprises at least three conditions for each of said normal and diseased cells.).

9. Claims 90-92 are rejected under 35 U.S.C. 102(b) as being anticipated by **Dong** et al. (Dong), "Efficient Mining of Emerging Patterns: Discovering Trends and Differences", 1999.

Regarding claim 90. (New) Dong teaches a training data set D containing mushroom characteristic data for a plurality of mushrooms derived from a plurality of edible mushrooms and a plurality of poisonous mushrooms (see §1 Introduction, Examiner interprets "the Mushroom Data (from the UCI repository)" to comprise a training data set D containing mushroom characteristic data for a plurality of mushrooms derived from a plurality of edible mushrooms and a plurality of poisonous mushrooms.), a method for determining a plurality of emerging patterns within the mushroom characteristic data, wherein said emerging patterns can be used to test mushrooms from a test sample to determine if said test mushrooms are edible (see



Abstract, Examiner interprets "border-based algorithms...derived by Max-Miner" to be method for determining a plurality of emerging patterns within the mushroom characteristic data.), the method comprising the steps of:

determining a plurality of emerging patterns from the training data set D, wherein each of said emerging patterns comprises at least one condition based on a particular characteristic of said mushroom characteristic data for at least one of said plurality of mushrooms (see §1 Introduction, Example 1.1, Examiner interprets X and Y to be a plurality of emerging patterns from the training data set D, wherein each of said emerging patterns comprises at least one condition based on a particular characteristic of said mushroom characteristic data for at least one of said plurality of mushrooms.) and wherein a plurality of occurrences satisfies said at least one condition for one of said edible and poisonous mushrooms (see §1 Introduction, Example 1.1, Examiner interprets *supp\_in\_poisonous* and *supp\_in\_edible* to be a plurality of occurrences that satisfy said at least one condition in EP Y for one of said edible and poisonous mushrooms.), but no occurrence satisfies said at least one condition for the other of said edible and poisonous mushrooms (see §1 Introduction, Example 1.1, Examiner interprets

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*supp\_in\_poisonous and supp\_in\_edible to be a plurality of occurrences where no occurrence satisfies said at least one condition in EP X for the other of said edible and poisonous mushrooms.);*

creating 2 lists, wherein: a 1st list of said 2 lists contains a frequency of occurrence,  $f_1(m)$ , of each emerging pattern  $EP_1(m)$  from said plurality of emerging patterns that has a non-zero occurrence in data associated with said edible mushrooms (see §1 Introduction, Example 1.1, *Examiner interprets supp\_in\_edible to contain a frequency of occurrence,  $f_1(m)$ , of each emerging pattern  $EP_1(m)$  from said plurality of emerging patterns that has a non-zero occurrence in data associated with said edible mushrooms.); and*

a 2nd list of said 2 lists contains a frequency of occurrence,  $f_2(m)$ , of each emerging pattern  $EP_2(m)$  from said plurality of emerging patterns that has a non-zero occurrence in data associated with said poisonous mushrooms (see §1 Introduction, Example 1.1, *Examiner interprets supp\_in\_poisonous to contain a frequency of occurrence,  $f_2(m)$ , of each emerging pattern  $EP_2(m)$  from said plurality of emerging patterns that has*

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a non-zero occurrence in data associated with said poisonous mushrooms.);

wherein said 2 lists each provide a plurality of emerging patterns that can be used to determine whether the mushrooms from the test sample are edible or poisonous (see §1 Introduction, Example 1.1, *Examiner interprets supp\_in\_poisonous and supp\_in\_edible to provide a plurality of emerging patterns (X and Y) that can be used to determine whether the mushrooms from the test sample are edible or poisonous.*).

Regarding claim 91. (New) *Dong* teaches the method of claim 90, wherein at least one of said emerging patterns comprises at least three conditions for each of said edible and poisonous mushrooms (see §1 Introduction, Example 1.1, *Examiner interprets EP Y to be at least one of said emerging patterns comprises at least three conditions for each of said edible and poisonous mushrooms.*).

Regarding claim 92. (New) *Dong* teaches the method of claim 90, further comprising steps for:

providing a test sample (see §6.2 MBD-LLBORDER on **Mushroom**, Examiner interprets the "edible class" and the "poisonous class" to provide a test sample.);

testing a plurality of mushrooms in said test sample to produce a test data set, said plurality of mushrooms comprising at least a portion of the mushrooms identified in said plurality of emerging patterns for said training data set D (see §6.2 MBD-LLBORDER on **Mushroom**, Examiner interprets the EPs represented by the "299811 borders" "from the poisonous class to the edible class" to represent a test data set, said plurality of mushrooms comprising at least a portion of the mushrooms identified in said plurality of emerging patterns for said training data set D.);

determining a plurality of emerging patterns from the test data set, wherein each of said emerging patterns comprises at least one condition based on a particular characteristic of said mushroom characteristic data for at least one of said plurality of test mushrooms and wherein a plurality of occurrences satisfies said at least one condition for at least one of said edible and poisonous mushrooms, but no occurrence satisfies said at least one condition for the other of said edible and poisonous mushrooms (see §1 Introduction, Example 1.1, Examiner

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*interprets EPs X and Y to be a plurality of emerging patterns from the test data set, wherein each of said emerging patterns comprises at least one condition based on a particular characteristic of said mushroom characteristic data for at least one of said plurality of test mushrooms and wherein a plurality of occurrences satisfies said at least one condition for at least one of said edible and poisonous mushrooms, but no occurrence satisfies said at least one condition for the other of said edible and poisonous mushrooms.); and*

*using a fixed number, k, of emerging patterns extracted from said training data, wherein k is substantially less than a total number of emerging patterns in the plurality of emerging patterns (see §1 Introduction, Example 1.1, Examiner interprets k to be "the growth rate threshold 2.5")., calculating 2 scores, a 1st score corresponding to the data associated with the edible mushrooms is derived from the frequencies of k emerging patterns in said 1st list that also occur in said test data (see §1 Introduction, Example 1.1, Examiner interprets the 1st score corresponding to the data associated with the edible mushrooms is derived from the frequencies of k emerging patterns in said 1st list to be the growth rate  $21.4 = 81.4/3.8$ .); and*

a 2nd score corresponding to the data associated with the poisonous mushrooms is derived from the frequencies of  $k$  emerging patterns in said 2nd list that also occur in said test data (see §1 Introduction, Example 1.1, *Examiner interprets the 2nd score corresponding to the data associated with the poisonous mushrooms is derived from the frequencies of  $k$  emerging patterns in said 2nd list to be the growth rate "infinity".*); and

using said two scores to determine whether said test mushrooms are edible or poisonous (see §1 Introduction, Example 1.1, *Examiner interprets "EPs with very large growth rates are notable differentiating characteristics between the edible and poisonous Mushrooms..." to require using said two scores to determine whether said test mushrooms are edible or poisonous.*).

### **Claim Rejections - 35 USC § 103**

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this

Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

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Patentability shall not be negated by the manner in which the invention was made.

11. Claims 83 and 84 are rejected under 35 U.S.C. 102(a) as being unpatentable over **Dong** in view of **Alon**.

Regarding claim 83. (Previously Presented) *Dong* teaches a system (see §Performance evaluation, Examiner interprets the "150MHz Sun SPARCstation-10 machine with 160M bytes of RAM" to be a system.) for determining a plurality of emerging patterns within a training data set D (see §2 The EP mining problem and its decomposition), wherein said at least one processor is configured to: access data within the training data set D (see §1 Introduction and 6.2 MBD-LLBORDER on Mushroom, Examiner interprets the "Mushroom Data (from the UCI repository)" to comprise the training data set D.).

*Dong* does not teach the system comprising of:

at least one memory (see p. 1-2, Examiner interprets a "Sun SPARCstation-10 " to have at least one memory.),

at least one processor (see p. 1-2, Examiner interprets a "Sun SPARCstation-10 " to have at least one processor.), and

at least one user interface (see p. 1-1, *Ex Examiner interprets a "Sun SPARCstation-10 " to have at least one user interface.*),

all of which are connected to one another by at least one bus (see p. 1-2, *Examiner interprets a "Sun SPARCstation-10 " to have at least one bus connecting the memory, processor and user interface.*).

*Dong* does not teach a training data set D containing gene expression data for a plurality of genes derived from a normal cell group including a plurality of normal cells and a diseased cell group including a plurality of diseased cells associated with a disease, wherein said emerging patterns are configured to be used to test cells from a test sample for the presence of the disease,

gene expression data within the training data set D;

determine a plurality of emerging patterns from the training data set D, wherein  
each of said emerging patterns comprises at least one condition based on a fixed range of said gene expression data for at least one of said plurality of genes, and



wherein a plurality of occurrences satisfies said at least one condition for one of said normal cell group and diseased cell group, but no occurrence satisfies said at least one condition for the other one of said normal cell group and diseased cell group; and

create two lists, wherein a first list of said two lists contains a frequency of occurrence,  $f_1(m)$ , of each emerging pattern  $EP_1(m)$  from said plurality of emerging patterns that has a non-zero occurrence in data associated with said normal cells, and a second list of said two lists contains a frequency of occurrence,  $f_2(m)$ , of each emerging pattern  $EP_2(m)$  from said plurality of emerging patterns that has a non-zero occurrence in data associated with said diseased cells,

wherein said two lists each provide a plurality of emerging patterns configured to be used as a diagnostic tool to determine whether the cells from the test sample are normal or diseased.

However, Alon does teach a training data set D containing gene expression data for a plurality of genes derived from a normal cell group including a plurality of normal cells and a diseased cell group including a plurality of diseased cells associated

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with a disease (see Abstract, *Examiner interprets the "40 tumor and 22 normal colon tissue samples" to be a plurality of normal cells and a diseased cell group including a plurality of diseased cells associated with a disease. Examiner interprets the gene expression data from the analysis of the samples performed with the "Affymetrix oligonucleotide array" to comprise a training data set D.*), wherein said emerging patterns are configured to be used to test cells from a test sample for the presence of the disease (see Abstract, "Two-way clustering thus may be of use both in classifying genes into functional groups and in classifying tissues based on gene expression."),

gene expression data within the training data set D (see pp. 196-7, 6.3. §Experiments on microarray gene expression data);

determine a plurality of emerging patterns from the training data set D (see Abstract, *Examiner interprets "two way clustering...applied to both the genes and the tissues" to be a method for determining a plurality of emerging patterns within the gene expression data.*), wherein each of said emerging patterns comprises at least one condition based on a fixed range of said gene expression data for at least one of said plurality of genes (see §MATERIALS AND

METHODS, p. 6746, col. 1, *Examiner interprets "PM-MM intensities" to be at least one condition based on a fixed range of said gene expression data for at least one of said plurality of genes.*), and wherein a plurality of occurrences satisfies said at least one condition for one of said normal cell group and diseased cell group, but no occurrence satisfies said at least one condition for the other one of said normal cell group and diseased cell group (see p. 6747, Fig. 3, *Examiner interprets the variation of gene intensities to disclose a plurality of occurrences in one of said normal cell group and diseased cell group satisfies said at least one condition, but no occurrence in the other one of said normal cell group and diseased cell group satisfies said at least one condition.*); and

create two lists, wherein a first list of said two lists contains a frequency of occurrence,  $f_1(m)$ , of each emerging pattern  $EP_1(m)$  from said plurality of emerging patterns that has a non-zero occurrence in data associated with said normal cells, and a second list of said two lists contains a frequency of occurrence,  $f_2(m)$ , of each emerging pattern  $EP_2(m)$  from said plurality of emerging patterns that has a non-zero occurrence in data associated with said

diseased cells, wherein said two lists each provide a plurality of emerging patterns configured to be used as a diagnostic tool to determine whether the cells from the test sample are normal or diseased (see p. 6747, Fig. 3, *Examiner interprets "(A)...clustered data set of 2,000 genes in 22 normal and 40 tumor colon tissues" and "(B)...A but with EB and EB1 colon carcinoma cell lines (17) added to the data set" to be two lists each providing a plurality of emerging patterns configured to be used as a diagnostic tool to determine whether the cells from the test sample are normal or diseased.*).

It would have been obvious at the time the invention was made to persons having ordinary skill in the art to combine *Dong* with *Alon* to provide a broad picture of the state of the cell, by monitoring the expression level of thousands of genes at the same time.

Regarding claim 84. (Previously Presented) *Dong* in view of *Alon* teaches the system of claim 83, wherein at least one of said emerging patterns comprises at least three conditions for each of said normal and diseased cells (see *Alon*, §MATERIALS AND METHODS, p. 6746, Fig. 2 (color key), *Examiner interprets "PM-MM*

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*intensities" {-3, -2, ..., 6, 7} to comprises at least three conditions for each of said normal and diseased cells.)). It would have been obvious at the time the invention was made to persons having ordinary skill in the art to combine Dong with Alon to provide a broad picture of the state of the cell, by monitoring the expression level of thousands of genes at the same time.*

New grounds of rejection have been applied.

### Allowable Subject Matter

12. Claims 85-89 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### Response to Arguments

13. Applicant's arguments filed April 29, 2008 have been fully considered.

Applicant argues:

The Li article was published in Bioinformatics on May 2002. (See attached citation). This application is a National Phase Application of PCT Application Number PCT/SG2002/000190, filed on August 22, 2002. Thus, this application is entitled to the benefit of the filing date of the PCT application which is within one year of the publication of the Li article. Hence the Li article is not a bar under 35 U.S.C. 102(b). Accordingly, Applicant respectfully requests withdrawal of the rejection of claim 76 under 35 U.S.C. 102(b).

The Li article should also be removed as prior art under 35 U.S.C. 102(a). Applicant submits herewith a Declaration of Jinyan Li under 37 CFR § 1.132 establishing that the Li article describes Applicant's own work. As evidenced by the Declaration, Applicant is the sole inventor of the invention disclosed in this article, and the other author, Limsson Wong, was merely working under Applicant's direction.

Examiner responds:

Applicant's argument is moot based on new grounds of rejection.

Applicant argues:

Claims 83 and 89 are rejected under 35 U.S.C. 102(a) as being anticipated by Dong et al., "Mining Border Descriptions of Emerging Patterns from Dataset Pairs," 2004 (the Dong article). The publication of the Dong article is after the filing date of the PCT application to which this application claims the benefit. Accordingly, the Dong article is not prior art to this application. Applicant respectfully requests that the Dong article be removed as

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prior art, and that the rejection of claims 83 and 89 under 35 U.S.C. 102(a) be withdrawn.

Examiner responds:

Applicant's argument is moot based on new grounds of rejection.

Applicant argues:

Claim 82 is rejected under 35 U.S.C 103(a) as being unpatentable over Li in view of Dong. Applicant respectfully requests withdrawal of this rejection for the reasons discussed above with respect to claims 76, 83, and 89.

Examiner responds:

Applicant's argument is moot based on new grounds of rejection.

### Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan H. Brown, Jr. whose telephone number is 571-272- 8632. The examiner can normally be reached on M-F 0830-1700. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Vincent can be reached on 571-272-3080. The fax phone number for the organization where this

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application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nathan H. Brown, Jr.  
July 29, 2008

/David R Vincent/

Supervisory Patent Examiner, Art Unit 2129